ANALOGS OF INDOLE-3-CARBINOL METABOLITES AS CHEMOTHERAPEUTIC AND CHEMOPREVENTIVE AGENTS

ABSTRACT OF THE DISCLOSURE

Novel compounds useful as chemotherapeutic and chemopreventive agents are provided. The compounds are analogs of indole-3-carbinol metabolites wherein the structures and substituents of the compounds are selected to enhance the compounds' overall efficacy, particularly with respect to therapeutic activity, oral bioavailability, long-term safety, patient tolerability, and therapeutic window. The compounds are useful not only in treatment of cancer but also in prevention of cancer. One preferred class of the novel compounds have the structure of formula (I)

(I)
$$\mathbb{R}^{3} \longrightarrow \mathbb{R}^{1} \longrightarrow \mathbb{R}^{5} \longrightarrow \mathbb{R}^{6}$$

$$\mathbb{R}^{3} \longrightarrow \mathbb{R}^{1} \longrightarrow \mathbb{R}^{10} \longrightarrow \mathbb{R}^{12}$$

wherein R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, and R¹² are defined herein. Pharmaceutical compositions are provided as well, as are methods of synthesis and use.